

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES



Ex parte TAKEHIKO HAMADA

Appeal No. 2005-1756
Application No. 09/057,455

ON BRIEF

Before THOMAS, HAIRSTON, and JERRY SMITH, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellant has appealed to the Board from the examiner's final rejection of claims 1-20. As indicated at pages 1 and 2 of the revised brief filed on October 7, 2003, appellant does not contest and even withdraws the appeal of claims 1-14. We therefore dismiss the appeal as to these claims. For the remaining claims, 15-20 on appeal, page 2 of the answer indicates that the examiner has withdrawn the outstanding rejection of

claim 20 under the second paragraph of 35 U.S.C. § 112. Claim 20 remains only objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Therefore, claims 15-19 remain for our consideration on appeal.

Independent claim 15 is reproduced below:

15. A position detecting system for detecting a position of a bottom of a contact hole in a circuit component having said contact hole through an insulating film on a surface of a silicon substrate, the system comprising a beam irradiating means for irradiating an electron beam toward said surface of said silicon substrate, a beam scanning means for relatively scanning said electron beam so that said electron beam moves in relation to said surface of said silicon substrate, a voltage applying means for applying a voltage to a rear surface of said silicon substrate which is scanned by said electron beam, so that when said electron beam is bombarded onto a surface of said insulating film, an electric current does not flow in said silicon substrate, but when said electron beam is bombarded onto said surface of said silicon substrate through said contact hole, an electric current flows in said circuit component as the result of said electron beam that flows as said electric current through said silicon substrate to said voltage applying means because of the voltage applied to said rear surface of said silicon substrate, a current detecting means for detecting said electric current flowing in said circuit component, at said rear surface of said silicon substrate, and a position detecting means for detecting the position of the bottom of said contact hole, with reference to the scanning start position of said electron beam and the

Appeal No. 2005-1756
Application No. 09/057,455

position when the detected current changes, the position of the bottom of said contact hole being detected without detecting secondary electrons and reflected electrons.

The following references are relied on by the examiner:

Munakata	3,535,516	Oct. 20, 1970
Kato et al. (Kato)	4,039,829	Aug. 02, 1977
Migitaka et al. (Migitaka)	4,219,731	Aug. 26, 1980
Todokoro et al. (Todokoro)	4,581,543	Apr. 08, 1986
Ichihashi et al. (Ichihashi)	4,600,839	Jul. 15, 1986
Peckerar et al. (Peckerar)	5,703,373)	Dec. 30, 1997
		(filed Nov. 03, 1995)

Claim 15 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Peckerar. Claims 16-19 stand rejected under 35 U.S.C. § 103. As to claims 16 -18, the examiner relies upon Munakata, Kato, Ichihashi and Peckerar, with the addition of Todokoro as to claim 19.

Rather than repeat the positions of the appellant and the examiner, reference is made to the revised brief filed on October 7, 2003 for appellant's positions (no reply brief has been filed), and to the answer filed on August 26, 2004 for the positions of the examiner.

OPINION

Since we find ourselves in agreement with the examiner's statement of rejection as to independent claim 15 at page 7 of the answer taken with the examiner's responsive arguments at pages 9 and 10 of the answer as well, we sustain the rejection of

independent claim 15 under 35 U.S.C. § 102. We add the following.

At the outset, we note that page 4 of the brief states that claims 15-19 fall together. Since we agree with the examiner's views with respect to the rejection of claim 15 under 35 U.S.C. § 102, and in view of the fact that no separate arguments have been presented by appellant as to the separately stated rejections of claims 16-19 under 35 U.S.C. § 103, we sustain the rejection of them as well. Again, no reply brief has been filed traversing the examiner's views with respect to the anticipation by Peckerar under 35 U.S.C. § 102 of claim 15.

We do not agree with the appellant's argument presented at pages 4-6 of the brief urging principally that Peckerar does not disclose the claimed "position detecting means" set forth at the end of claim 15 on appeal. More specifically, appellant asserts at page 6 of the brief that Peckerar determines the position of the beam relative to the film using the fiducial as alignment guides but does not disclose that this information is used to detect positions at the bottom of the contact hole if positions are not known. With this position we agree with the examiner's views expressed at pages 9 and 10 of the answer where the

examiner in part quotes and addresses directly the position of appellant set forth at the bottom of page 5 of the brief.

Whereas we agree with appellant's basic view that Peckerar does in fact monitor the position of an electronic beam on a film, the teachings of the reference are not limited to this as basically asserted by the examiner at page 10 of the answer. The most pertinent figures applicable to the claimed invention are figures 1, 2, 5-7 and 10. The showing at figure 6 illustrates the use of a voltage bias to the extent such is claimed, as well as the claimed detection across the entire substrate as depicted there that corresponds to the features of independent claim 15 on appeal. The frequency domain embodiment in figure 5 is, as noted by the examiner at the top of page 10 of the answer, shown to include a means 57 for measuring the phase angle that may be compared to the frequency domain signal 59. As expressed at lines 7-11 of column 8, the examiner notes that this is done "to improve the ability to locate the leading and/or trailing edges of the apertures 16. Points where a sharp change in the phase angle corresponds to a frequency domain peak may be associated with a leading or trailing edge of an aperture 16."

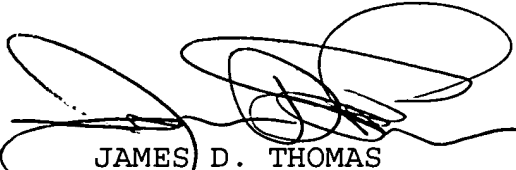
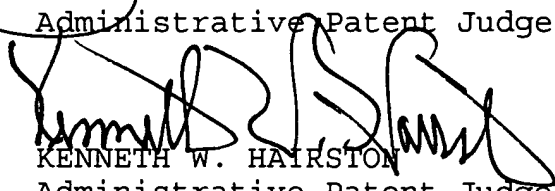

Although not depicted in the other figures, the teachings at column 4, lines 22-52, illustrate the operation of Peckerar's invention in the time domain. At lines 47-52, it is stated that "the signal detected by the current or potential detecting means 22 will be an absolute signal. In other words, the presence of a signal, rather than the change in a signal, will be associated with the alignment of the electron beam with an aperture 16." Contrary to appellants' positions in the brief, it is clear to us that Peckerar does teach to the artisan the ability to detect positions/geometry of such contact holes. Note specifically Figures 7 and 10.

In view of the foregoing, the decision of the examiner rejecting representative claim 15 under 35 U.S.C. § 102 is sustained. Because no arguments are presented against the rejections of dependent claims 16-19 under 35 U.S.C. § 103, the rejections of them is sustained as well. Therefore, the decision of the examiner is affirmed.

Appeal No. 2005-1756
Application No. 09/057,455

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a)(1)(iv).

AFFIRMED

)	
JAMES D. THOMAS)	
Administrative Patent Judge)	
)	
KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
)	
JERRY SMITH)	
Administrative Patent Judge)	

BOARD OF PATENT
APPEALS AND
INTERFERENCES

JDT/vsh

Appeal No. 2005-1756
Application No. 09/057,455

YOUNG & THOMPSON
745 SOUTH 23RD STREET
2ND FLOOR
ARLINGTON, VA 22202